ABSTRAK

Pengaruh *Hyperbaric Oxygen* (HBO) TerhadapEkspresi *Hypoxia Induced Factor-1 Alpha* (HIF-1 Alpha), *Vascular Endothelial Growth Factor* (VEGF)dan Luas Jaringan Endometriotik Pada Mencit Model Endometriosis

Latar Belakang: Hipoksia pada endometriosis akan meningkatkan ekspresi *Hypoxia Inducible Factor-1 alpha*(HIF-1alpha) selanjutnya meningkatkan ekspresi *Vascular Endothelial Growth Factor*(VEGF).*Hyperbaric Oxygen*(HBO) dapat menurunkan ekspresi HIF-1alpha karena meningkatkan ubiquitinisasi HIF-1alpha.Inilah peluang bagi HBO agar dapat digunakan sebagai salah satu modalitas pendukung pengobatan endometriosis.

Tujuan: Menganalisis pengaruh perbedaan dosis HBO 2,4 ATA 3x30 menit perhari selama 10 hari dan 2,4 ATA 90 menit perhari selama 10 hari terhadap ekspresi HIF-1 alpha,VEGF dan luas jaringan endometriotik pada mencit model endometriosis.

Metode: Desain penelitian ini adalah eksperimental laboratorium dengan rancangan *post test only control design* yang dilakukan dengan beberapa tahap yaitu pemodelan endometriosis,perlakuan hiperbarik,dan pengumpulan data.Selanjutnya data diuji normalitas dengan *Kolmogorov smirnov* dan homogenisitas dengan uji *Levene*.Bila data berdistribusi normal dan homogen,uji komparasi antar kelompok variabel penelitian diuji dengan *Annova* yang dilanjutkan dengan uji *post hock LSD*.Bila data berdistribusi normal dan tidak homogen maka perbedaan rerata diuji dengan *Brown forshyte* yang dilanjutkan dengan uji *post hock* dengan menggunakan uji *Games Howell*.Analisis hubungan antara variabel penelitian dilakukan dengan uji regresi linear.

Hasil: Ekspresi HIF-1alpha dijumpai perbedaan bermakna pada kelompok HBO 2.4 ATA 3x30 menit/hari.Ekspresi VEGF dijumpai perbedaan bermakna antara kelompok kontrol dengan kelompok HBO 2.4 ATA 3x30 menit/hari.Luas jaringan endometriotik dijumpai perbedaan bermakna pada kelompok HBO 2.4 ATA 3x30 menit/hari.

Kesimpulan: Terdapat hubungan kuat antara penurunan ekspresi HIF-1alpha dengan ekspresi VEGF.Penurunan ekspresi HIF-1alpha merupakan faktor yang memperantarai penurunan luas jaringan endometriosis akibat pemberian HBO 2,4 ATA 3x30 menit perhari selama sepuluh hari.

Keywords: Hypoxia**,** Endometriosis, *Hyperbaric Oxygen*(HBO), *Hypoxia Inducible Factor-1* alpha(HIF-1alpha),*Vascular Endothelial Growth Factor* (VEGF).

ABSTRACT

Effect of Hyperbaric Oxygen (HBO) to Expression of Hypoxia Inducible Factor-1 Alpha (HIF-1alpha),Vascular Endothelial Growth Factor (VEGF) and Endometriotic Tissue Size in Mice ModelEndometriosis

Introduction: Hypoxia in endometriosis will increase the expression of Hypoxia Inducible Factor-1alpha (HIF-1alpha), which leads to increased expression of Vascular Endothelial Growth Factor (VEGF).Hyperbaric Oxygen(HBO) can decrease the expression of HIF-1alpha because will improve ubiquitinisasi HIF-1alpha. This an opportunity for HBO to be used as one modality that supports the treatment of endometriosis.

Aims: To analyze the effect of HBO dose difference between dose 2.4 ATA HBO 3x30 minutes per day for 10 days and dose 2.4 ATA 90 minutes per day for 10 days in expression of HIF - 1 alpha, VEGF and size endometriotic tissue on mice model of endometriosis.

Methode: This study was an experimental laboratory with post test only control design conducted with several stages of modeling endometriosis , hyperbaric treatment , and collection of data. All data tested with Kolmogorov Smirnov analize normality and test Levene analize homogenous.Data homogeneous with normal distribution, comparison test between groups of variables were tested with One way Annova followed by post hock test LSD.Data with normal distribution but not homogeneous, the difference tested with Brown forshyte followed by post hock test by using test Games Howell.Analisis relationship among variables was performed by test linear regression.

Results: The expression of HIF-1alpha found significant differences in groups HBO 2.4 ATA 3x30 minutes / day.The expression of VEGF found significant differences between the control group and 2.4 ATA HBO group 3x30 minutes / day.Size of endometriotic tissue found significant differences in groups HBO 2.4 ATA 3x30 minutes / day.

Conclusion: There is a strong correlation between the decrease in the expression of HIF- 1alpha with expression VEGF. The decrease of expression HIF 1 lpha is a factor mediates reduction of size endometriotic tissue that due to the provision of 2.4 ATA HBO 3x30 minutes per day for ten days.

Keywords: Hypoxia**,** Endometriosis, *Hyperbaric Oxygen*(HBO), *Hypoxia Inducible Factor-1* alpha(HIF-1α),*Vascular Endothelial Growth Factor*(VEGF)